Exam.Code:0001
Sub. Code: 0060

2012

B.A./B.Sc. (General) First Semester

Microbiology

MIC-101: Fundamentals of Microbiology – I

Time allowed: 3 Hours Max. Marks: 33

***NOTE**: Attempt five questions in all, including Question No. I which is compulsory and selecting one question from each Unit.*

*x-x-x*

I. Define/Comment on the following terms:-

a) Log phase of bacterial growth curve

b) Rhizomorphs

c) Thermal death time

d) Plasmid

e) LPS of gram negative bacteria

f) Arbuscular (6x1½)

## UNIT - I

II. a) Discuss the contribution of Louis Pasteur in the history of microbiology.

b) Discuss the different Koch's postulates. (3+3)

III. a) What is autoclaving? How it eradicates the microbes?

b) What is generation time of a bacteria? How this is co-related to its growth rate. (3+3)

## UNIT - II

IV. a) Differentiate the cell structure of algae and fungi.

b) Describe the process of sporulation in bacteria. (3+3)

V. a) Why the endospores of bacteria is extremely heat resistant? How endospores are different from exospores?

b) Differentiate flagella and pili. (3+3)

## UNIT - III

VI. a) Draw a flow chart of insulin production by genetic engineering.

b) Why *E.coli* is considered as a suitable host in the genetic engineering. (4+2)

P.T.O.

VII. a) What are molecular scissors? Discuss its applications.

b) Enlist the problems of genetic engineering. (4+2)

## UNIT - IV

VIII. a) What functions do the members of the two component system play in infection of a plant by *Agrobacterium*? What are the roles of opines in this infection process?

b) What is Ti-plasmids? (4+2)

IX. a) Describe the non- symbiotic $N_2$ fixation by microorganisms.

b) Write short note on Endomycorrhizae. (3+3)

*x-x-x*